

ABSTRACT

INFLUENCE OF GIVING KAWISTA FRUIT TO THE LEVEL OF *MALONDIALDEHYDE* AND HISTOPATHOLOGY OF RATS' LUNG WHICH WERE EXPOSED TO CIGARETTE SMOKE

Cigarette smoke constitutes source of free radical (oxidant) that can increase incident of cell membrane lipid peroxide. *Malondialdehyde* (MDA) is one final product of lipid peroxide that can be used as oxidative stress biomarker. Particles in cigarette smoke can activate macrophage alveolar which is the defense system of lung to environment air. Consequence of this lung defense system is activation of alveolar macrophage cell can raises inflammation which can aggravate damage of lung. Activation of macrophage alveolar has close relation with production and inactivation of free radical in cells or tissues. Kawista fruit has phenol compound among others are flavonoid and tanin which has potential as antioxidant that can muffle the bad effect of free radical. This research aims to know influence of giving kawista fruit to level of *malondialdehyde* and histopathology of rats' lung which were exposed to cigarette smoke. This experimental study used post test only group design on 25 male Wistar rats for 35 days treatment. The rats were divided into 5 groups that is (1) negative control group (without treatment); (2) positive control group (exposed by cigarette smoke); (3) P1 group (cigarette smoke + kawista fruit with dose of 500 mg/kg BB); (4) P2 group (cigarette smoke + kawista fruit with dose of 600 mg/kg BB); (5) P3 group (cigarette smoke + kawista fruit with dose of 700 mg/kg BB). Result of the research indicates that kawista fruit on three doses can prevent *malondialdehyde* expression in serum of rats that were exposed to cigarette smoke ($p=0.000$). Kawista fruit with dose of 600 and 700 mg/kg BB can decrease inflammation thereby amount of macrophage alveolar activation decrease ($p=0.000$). It can be concluded that by giving kawista fruit it can decrease *malondialdehyde* expression and amount of macrophage alveolar activation in Wistar rats that were exposed to cigarette smoke.

Keywords: kawisa fruit, antioxidant, cigarette smoke